

let's look at...

MCGREGOR

SHELLS AND SHELLFISH



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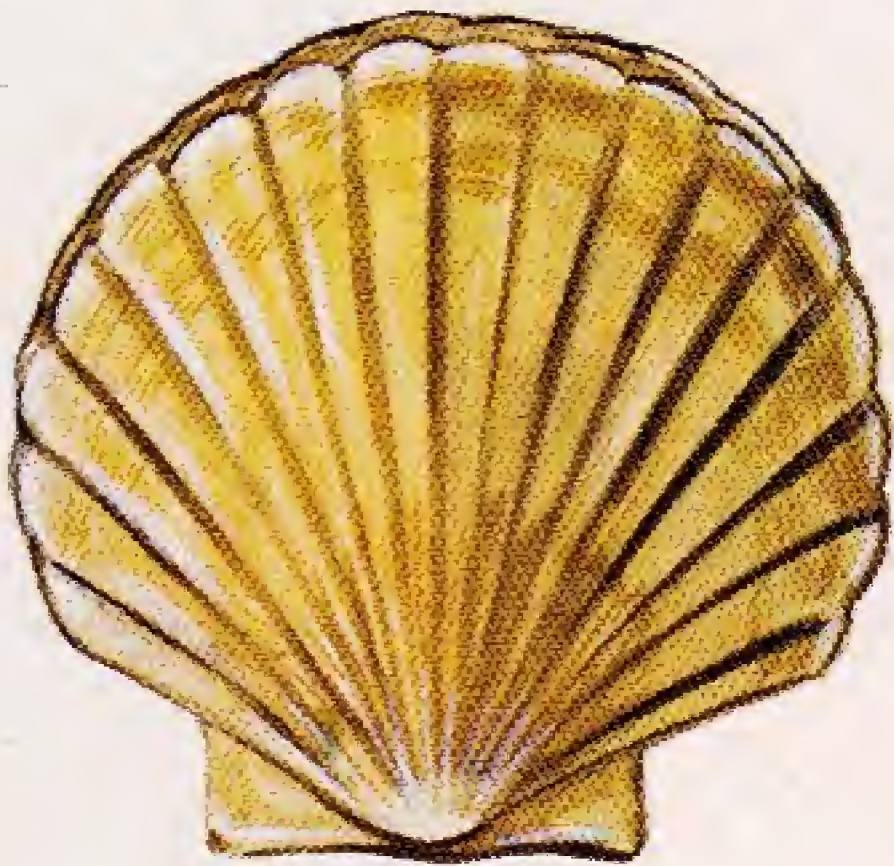
A PROJECT BOOK

ILLUSTRATED BY ERNEST PAPPS

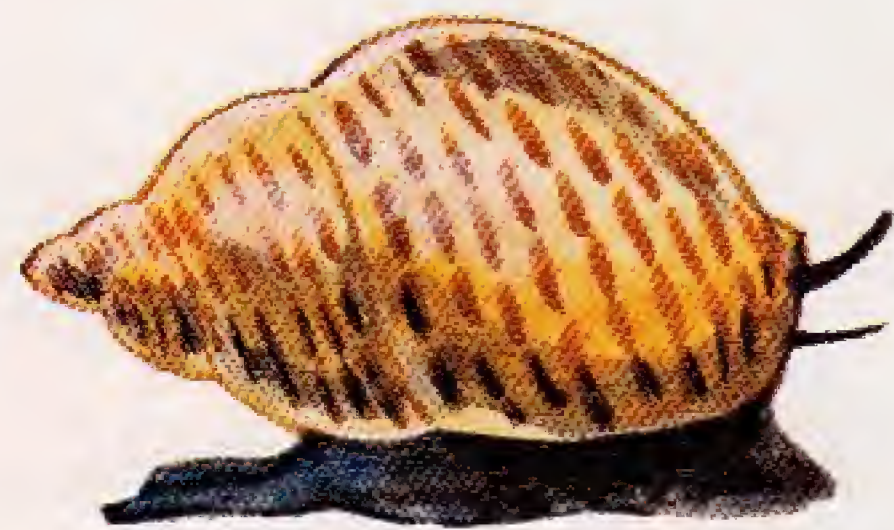
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In the entire animal kingdom there is no comparable collection of creatures so diverse in size, appearance and habits as the shellfish, with approximately 90,000 species. All are classified in a group called the Mollusca which includes a tremendous variation of terrestrial, freshwater, and marine invertebrates. Some of the animals possess shells, some do not.

Molluscs are divided into five main groups . . .



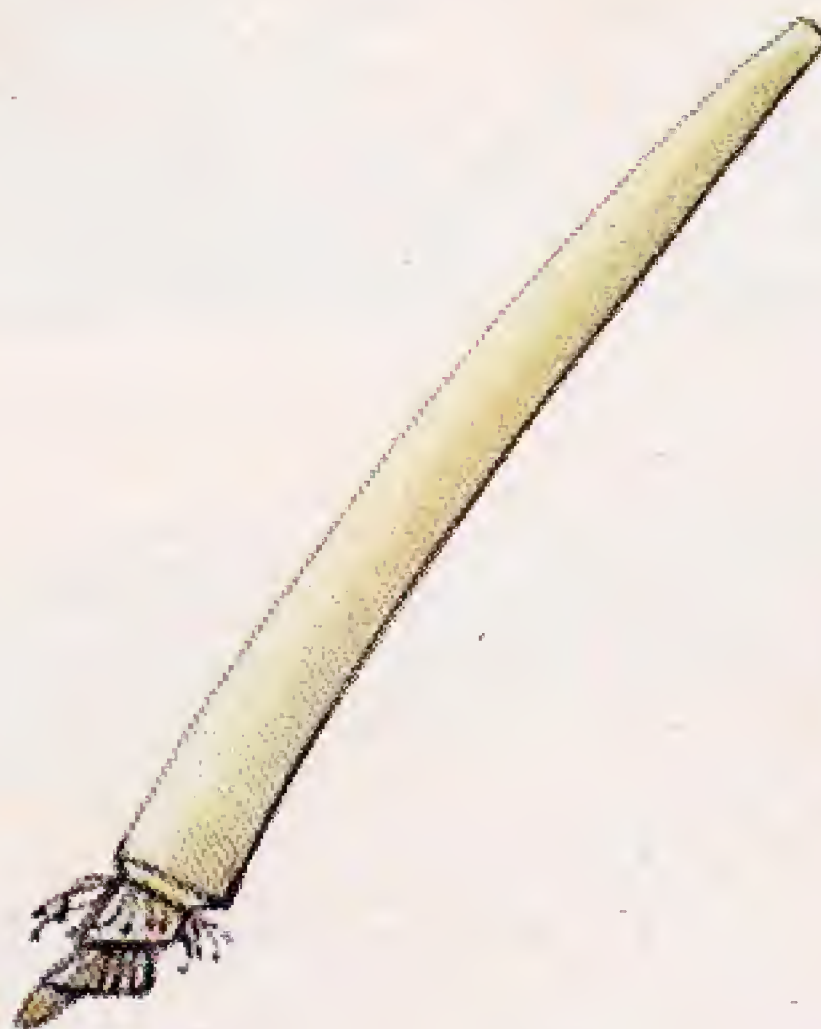
BIVALVE



UNIVALVE



CHITON



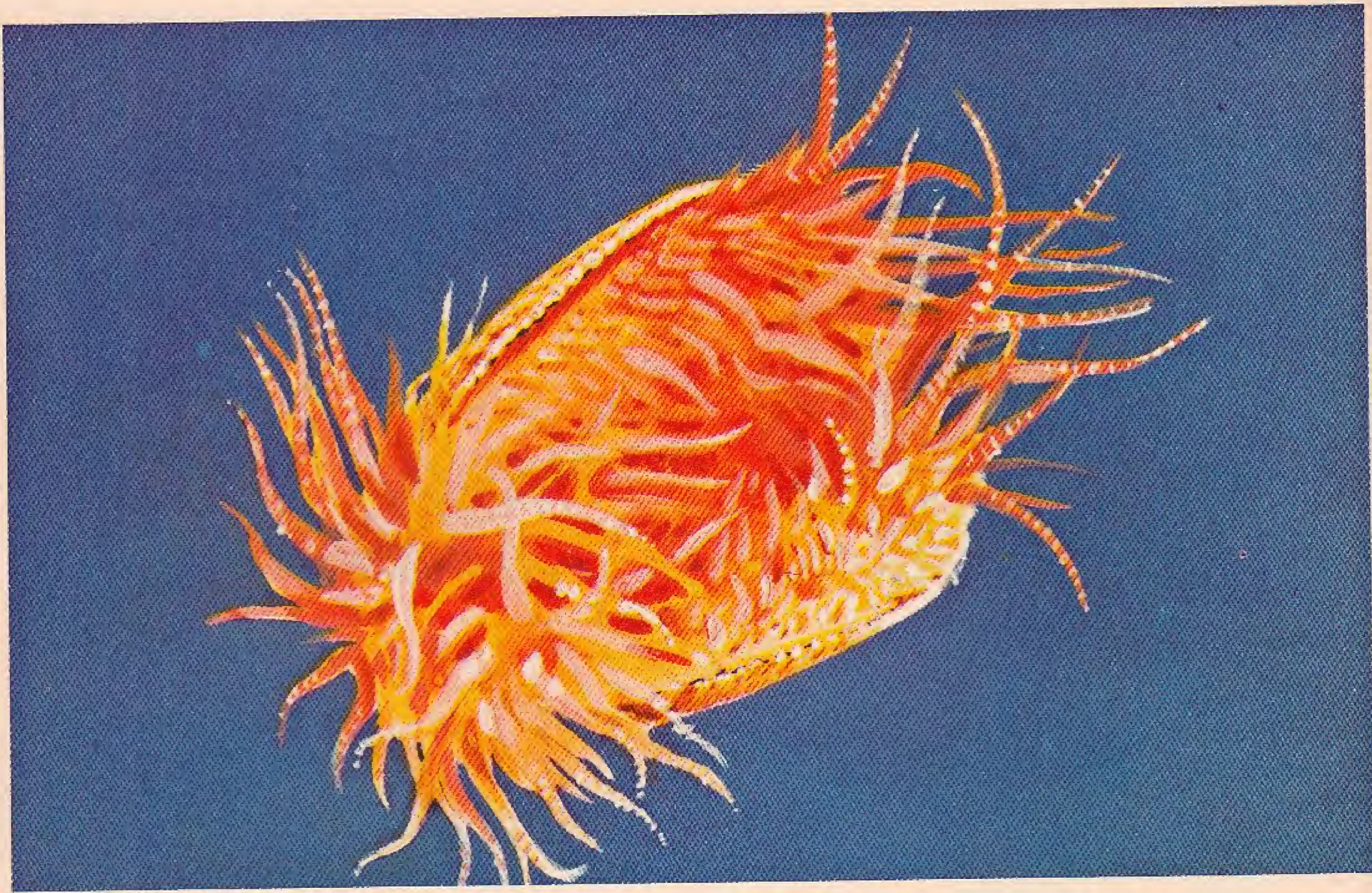
TUSK SHELL



CEPHALPOD

BIVALVE

Bivalve shellfish have the shell in two pieces (or valves) hinged at the top by an elastic ligament. They feed by extracting plankton from the water. They are a very diverse group; some can swim, and others can bore into rock, but nearly all live in mud or sand, and move about by means of a muscular foot.

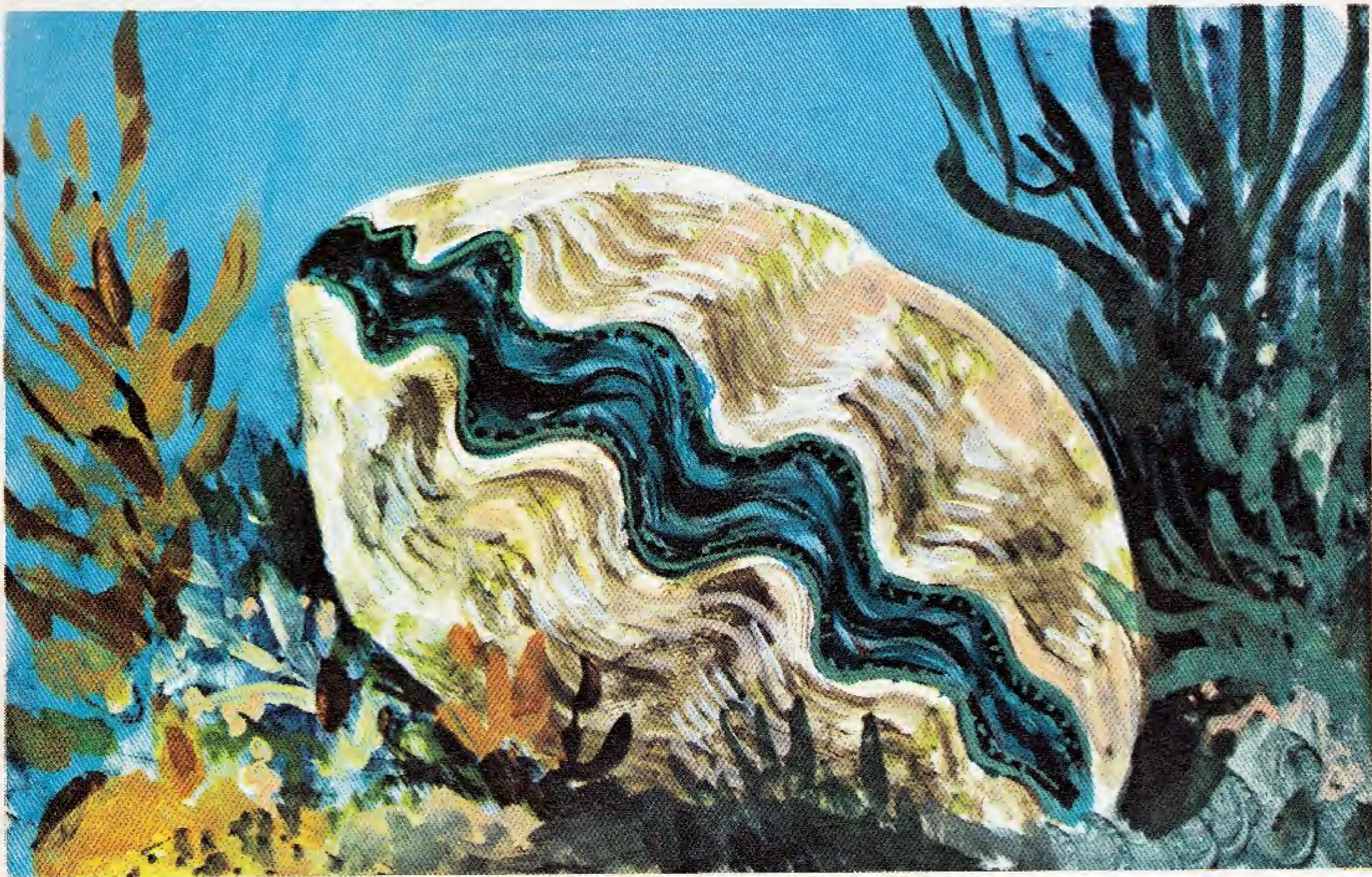


The colourful *File Shell* swimming underwater.

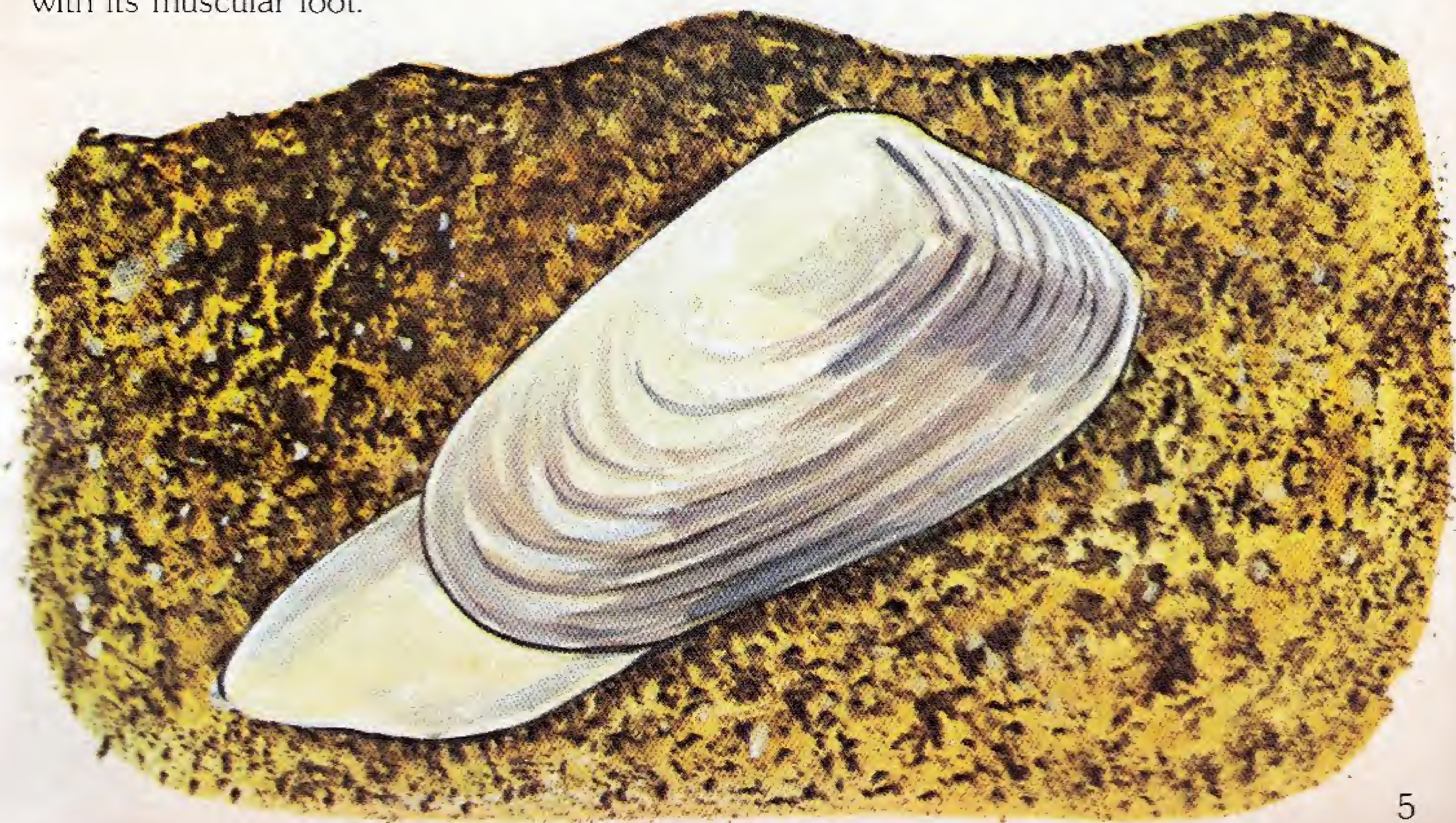


The *Rock Borer* lives embedded in cavities, which it digs out, usually in sandstone rock.

The *Giant Clam* is so heavy that it is quite immobile.
It is the largest of the Bivalves sometimes exceeding 500 lbs.



The *Toheroa* can dig surprisingly fast into the sand
with its muscular foot.



Now let us look at a selection
of Bivalve shells.

1



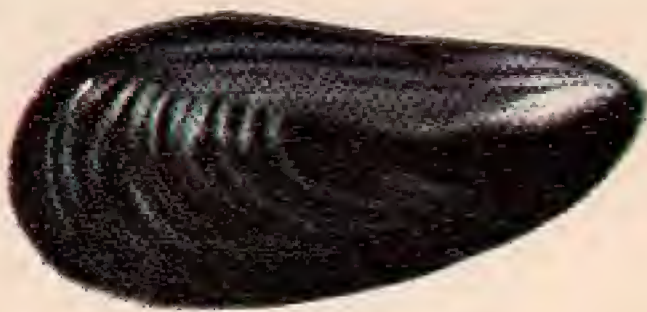
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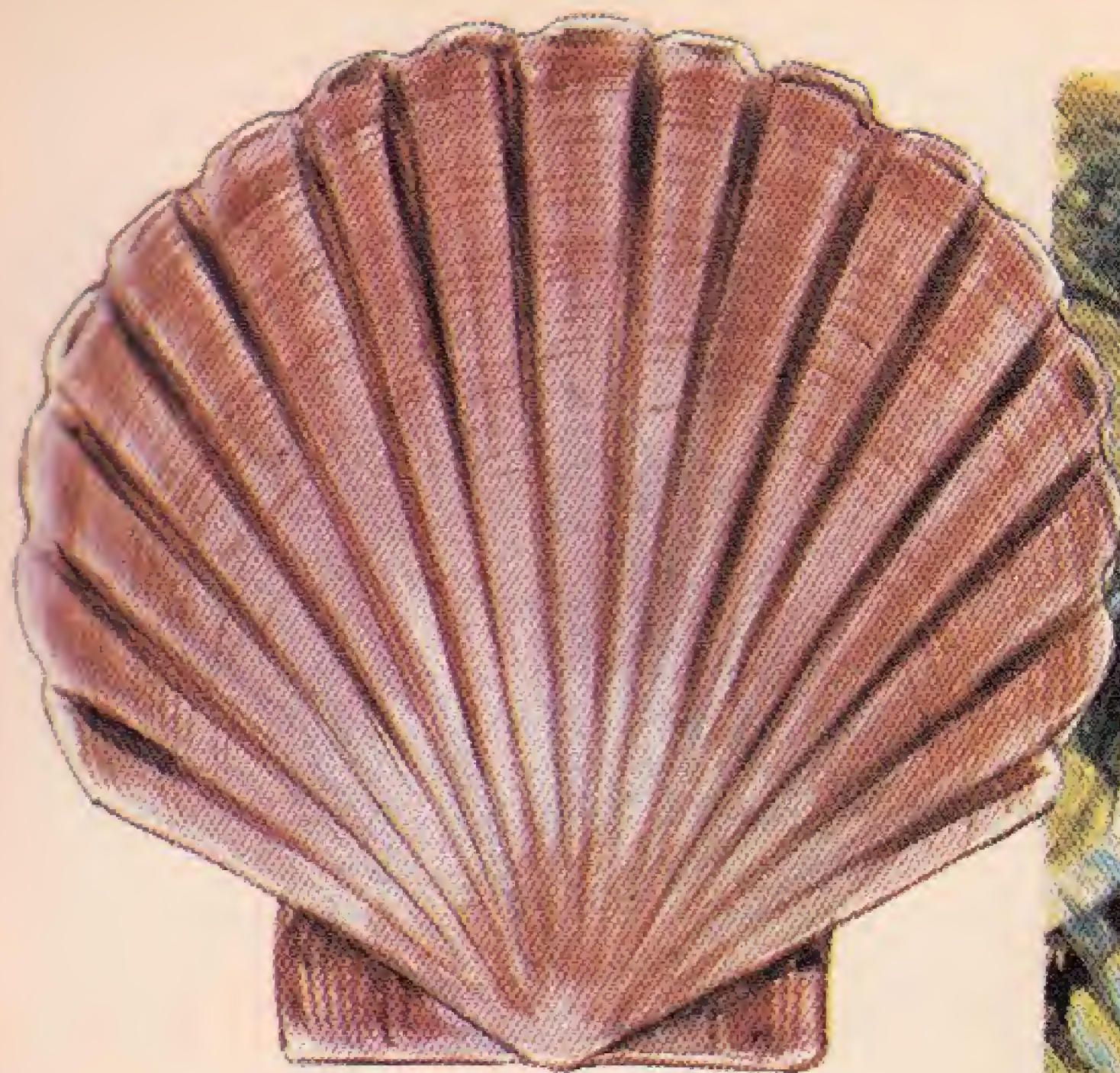


4



1. HORSE MUSSEL
Can achieve a length of 13 inches.
2. GREEN MUSSEL
3. BLUE MUSSEL
4. SMALL BLACK MUSSEL
5. COCKLE
with its foot extruded.





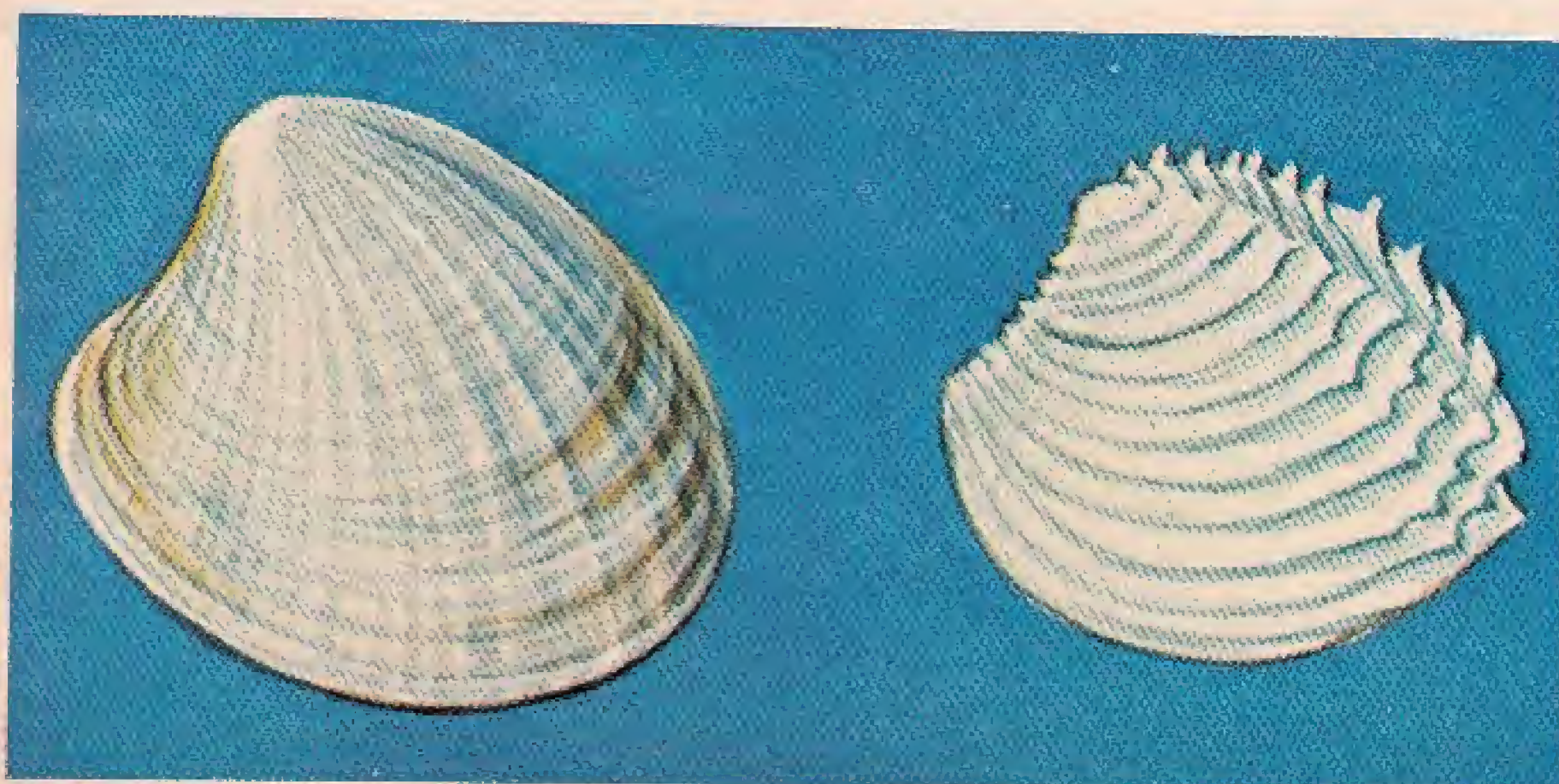
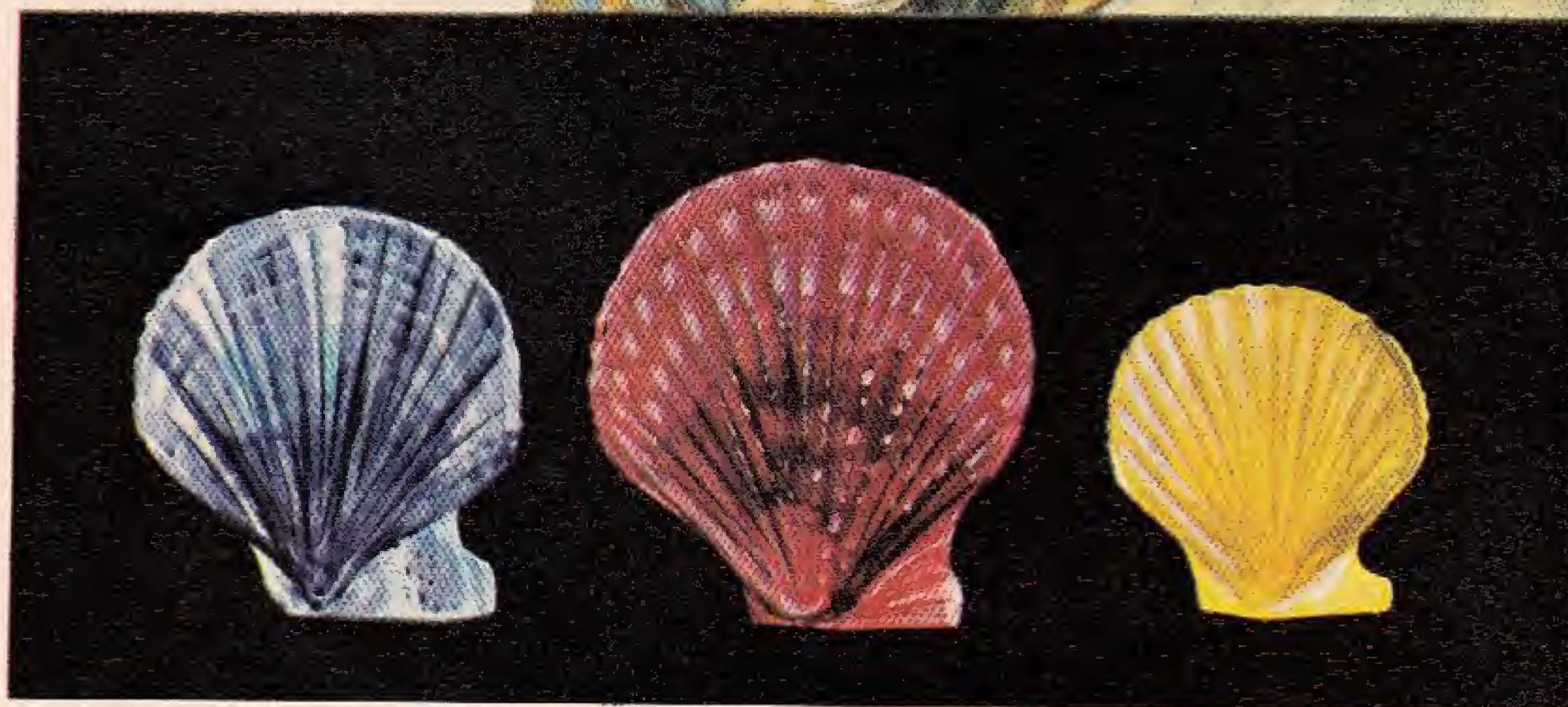
QUEEN SCALLOP

This handsome shell is representative of a world-wide and ancient family. On the right is a close-up of the Scallop's blue eyes, which ring the shell.



FAN SHELLS

A beautiful shell in a wide range of sizes and colours.



VENUS SHELLS

A world-wide family remarkable for their variety of surface sculpture.

1. FILE SHELL

This *File Shell* is found in deep water round the coasts of New Zealand.

2. SUNSET SHELL

This fragile thin shellfish lives deeply buried at or below low tide on partly exposed beaches.

3. WEDGE SHELL

All the *Wedge Shells* have one end more or less extended to a point. They live deeply buried from mid-tide to deeper water.

Below L. to R.

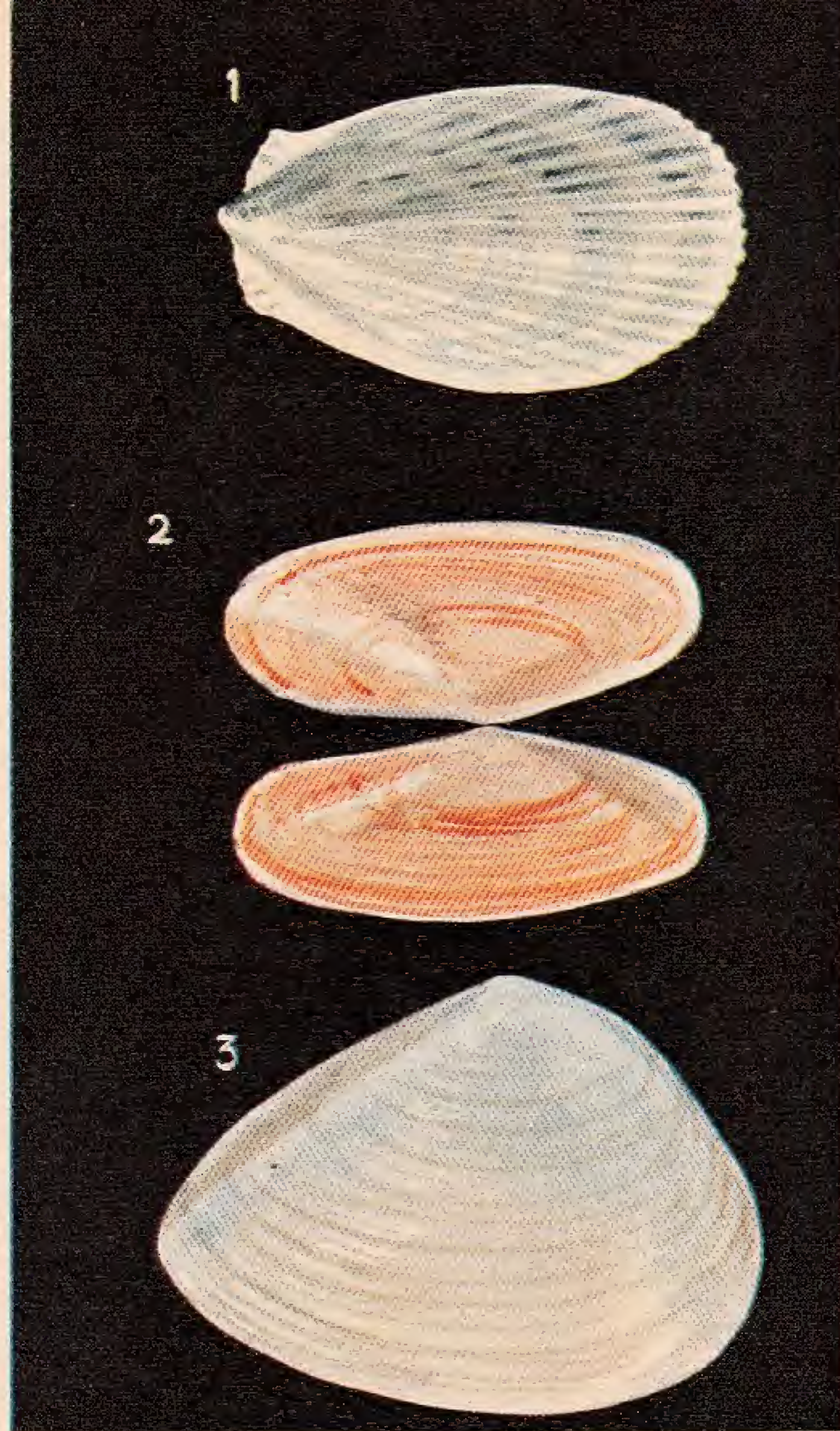
These shellfish are prized as culinary delicacies.

TUATUA

PIPI

TOHEROA

Perhaps the best known as an edible shellfish.



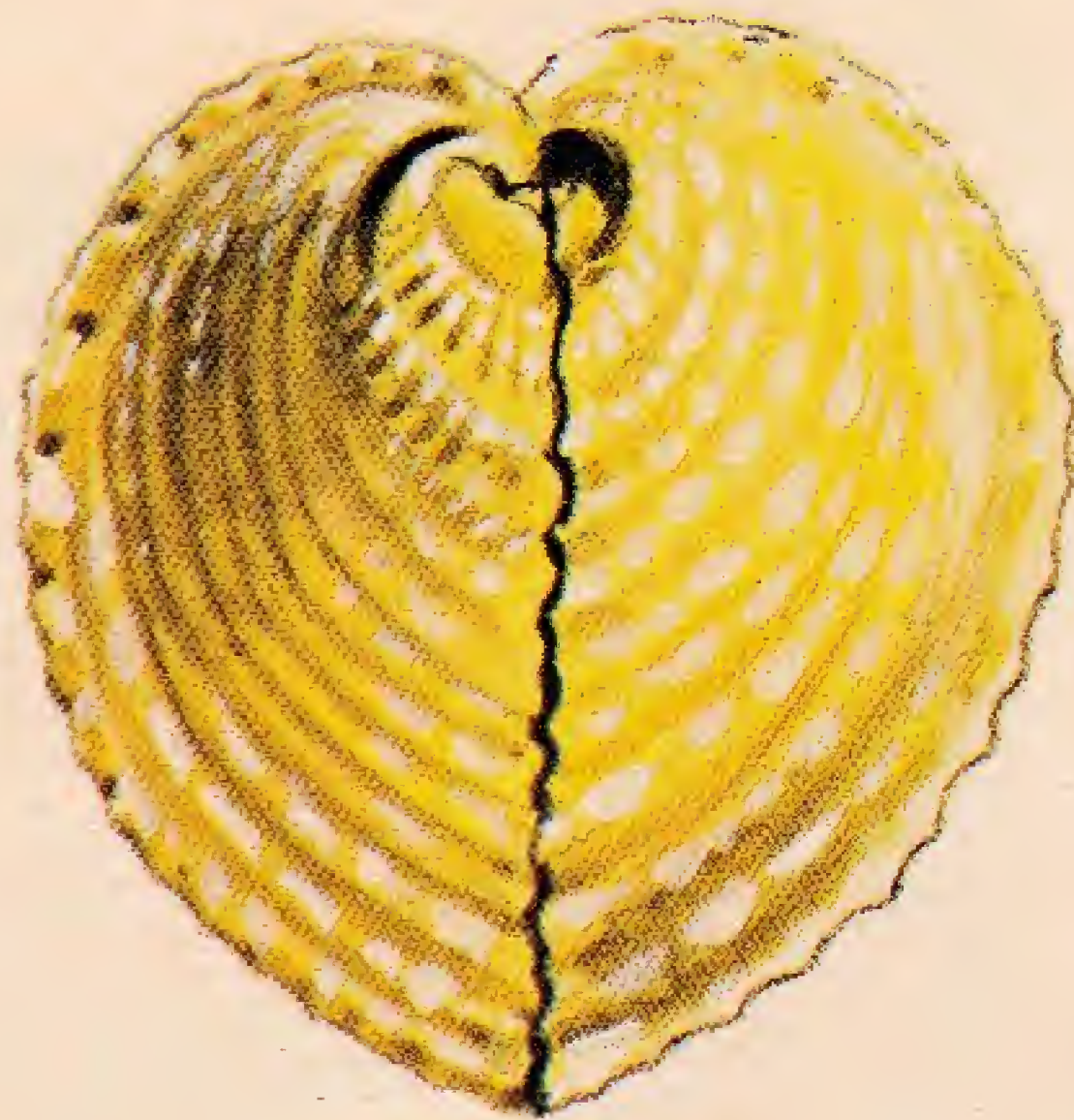


POD RAZOR

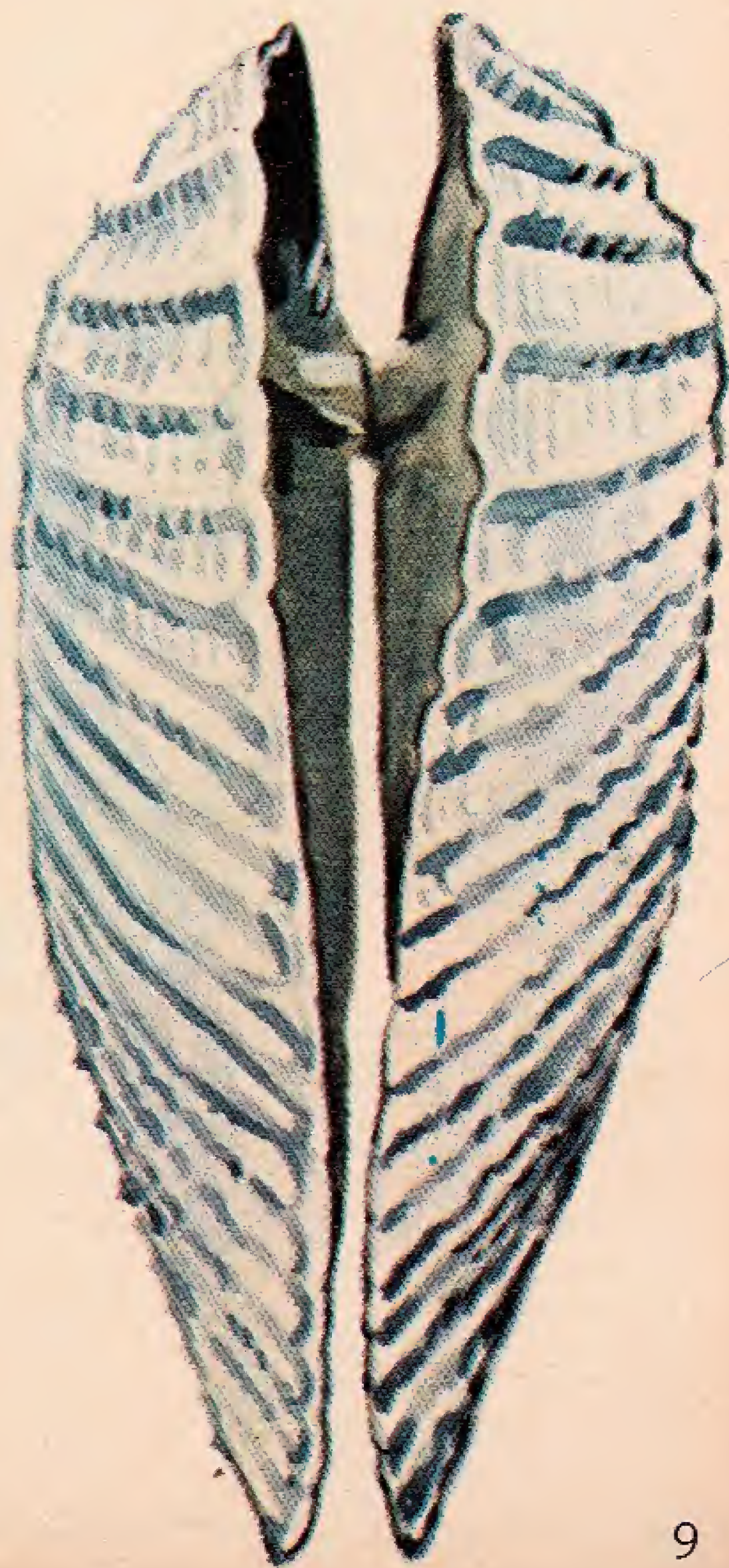


THORNY OYSTER

A highly coloured shell from Japan.



HEART COCKLE



ANGEL'S WING

One of the world's most exquisite bivalves, it is difficult to collect because it lives an arm's length down in sand and mud.

UNIVALVE

The largest group of shellfish known as *Univalves* or *Gastropoda* (literally stomach-footed ones) comprises molluscs which secrete a one piece shell, or valve, and crawl on a disc-like foot. Shells range in exquisite shape, colour and texture, from the simple tent-like limpets to magnificent ornate specimens. In some the shell is reduced, like the *Shield Shell*, and in the *Sea Slugs* may be lacking completely.

HALIOTIS SHELLS

This group comprises a world-wide family of 130 species. They have been used for food since ancient times. Local names vary.

1. Known as the Paua (New Zealand).
Abalone (N. America).

2. Silver Paua.



LIMPET SHELLS

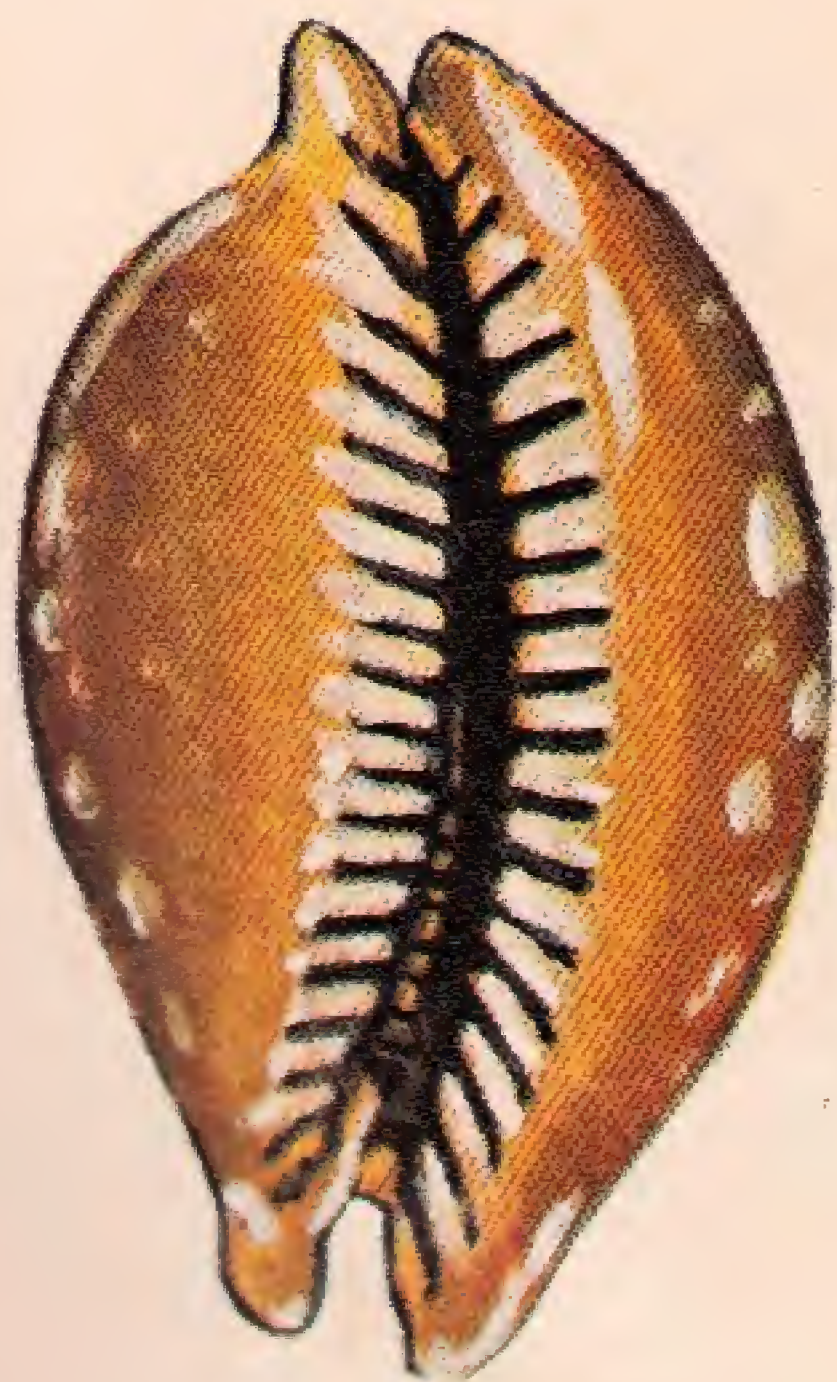
These small oval shells are found tightly attached to rocks between tides.



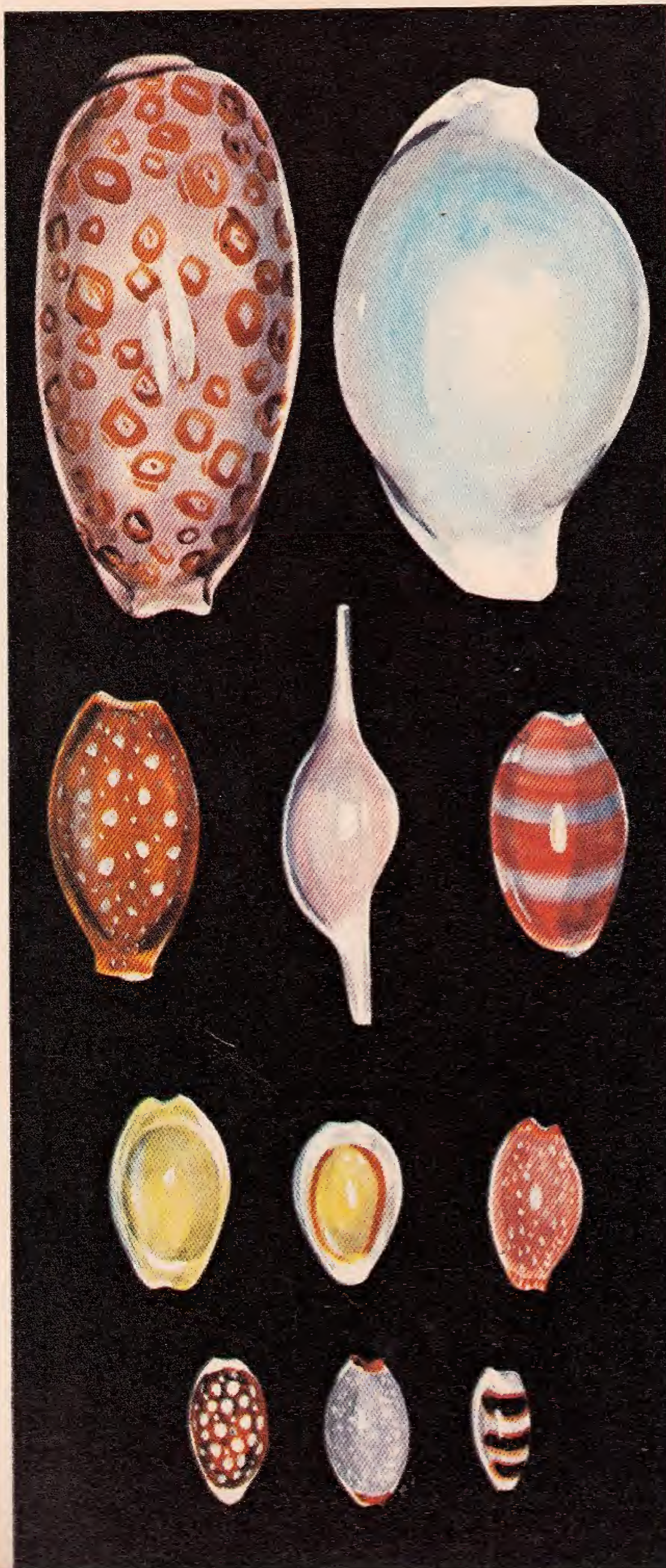
COWRIES

Cowry Shells are renowned for their beauty, unsurpassable polish, and attractive shape. Possibly the best known of all molluscs these outstanding shells are favourites with shell collectors the world over.

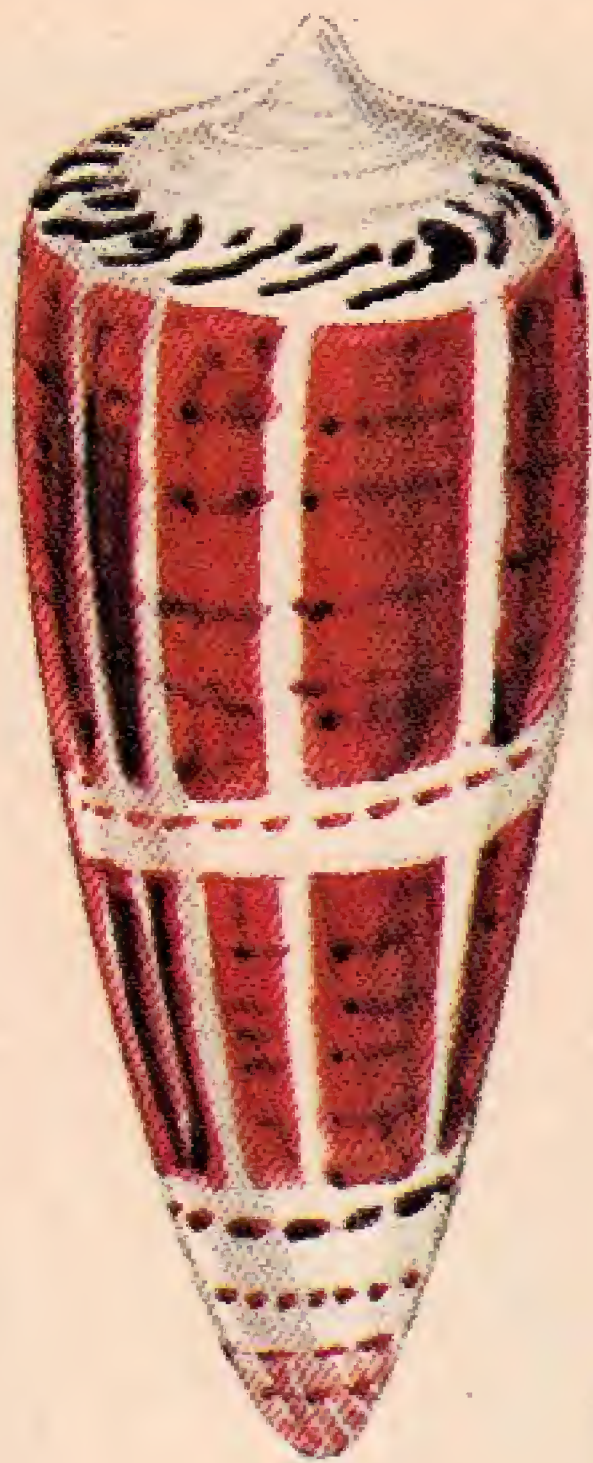
These are just a few of the great variety.



The underside of the Cowry Shell.



East African Cone Shell



Two Cone Shells from Australia



CONE SHELLS

The beautiful *Cone Shells* conceal a poisonous barbed sting with which they catch their prey. They live in deep water, hiding in holes in coral reefs.



OLIVE SHELL

Three representatives of a large group of shellfish known as *Olividae*, sought after by collectors for their beautiful polish and lovely patterns. The shell on the right is the largest of the species. *Camp Olive* (3½").



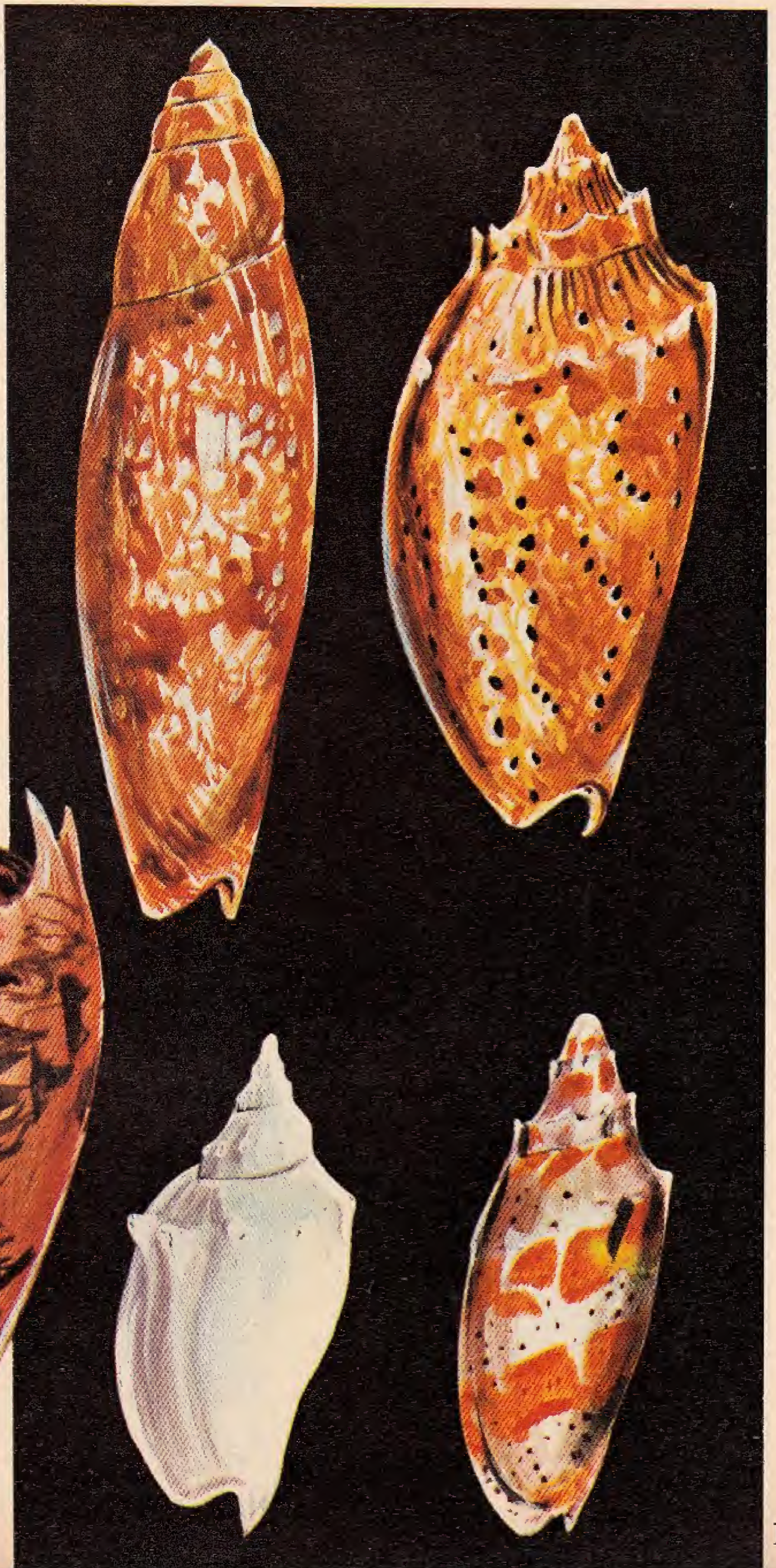
WHELK

Two species from the large family of *Whelks*. Above: *Siphon Whelk*. Below: *Lined Whelk*.

VOLUTES

These glistening shells are prized by collectors for their beauty, size, and in many species — rarity. Their popularity is only surpassed by the Cowries and the Cones. These creatures spend most of their time buried in the sand, emerging at night, for food. All are carnivorous, preying mainly on small bivalves.

Below:
The handsome
Voluta imperialis.



STROMBS

Strombs are characterised by a strong muscular foot, armed with a spur. Some of these shells have underside

and interiors beautiful shades of orange and red. These are sought and prized by collectors.

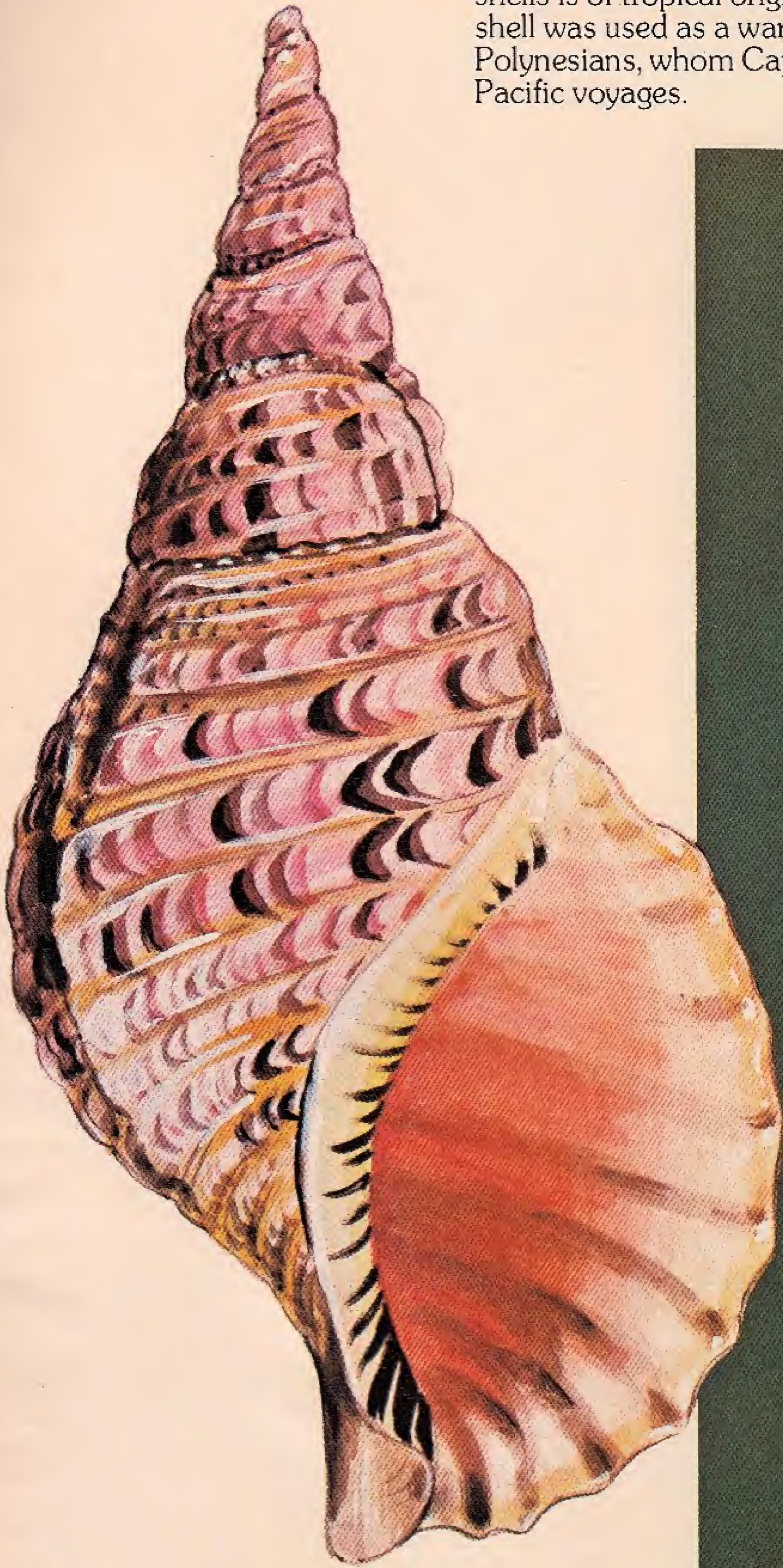
Left:
All these species of Strombs are found in Australian waters.

Below:
Strombus gallus
from Barbados.



TRITON

This family of large beautiful shells is of tropical origin. The *Triton* shell was used as a war-trumpet by the Polynesians, whom Captain Cook met on his Pacific voyages.



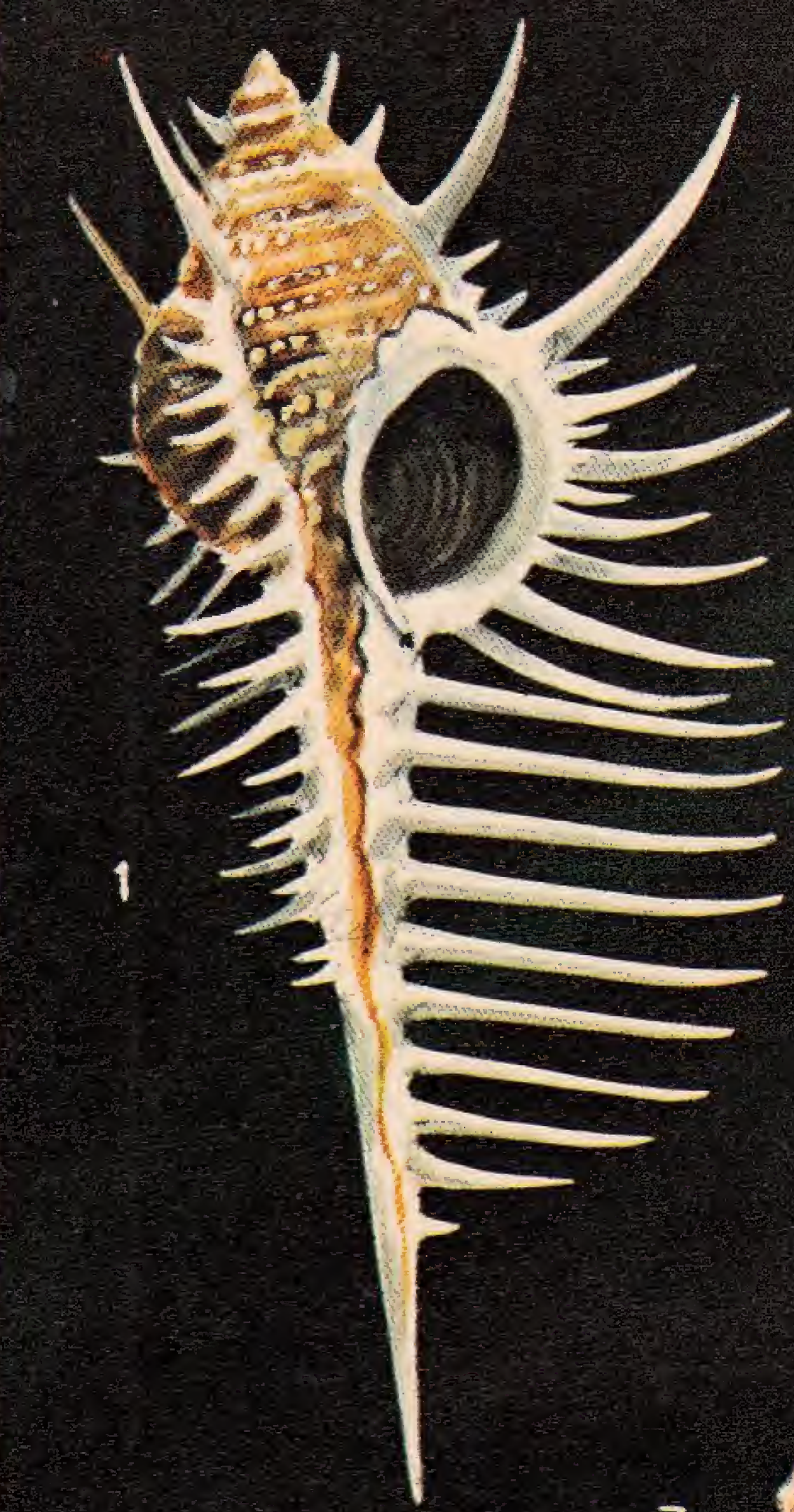
Above: *Charonia tritonis*.



MUREX SHELLS

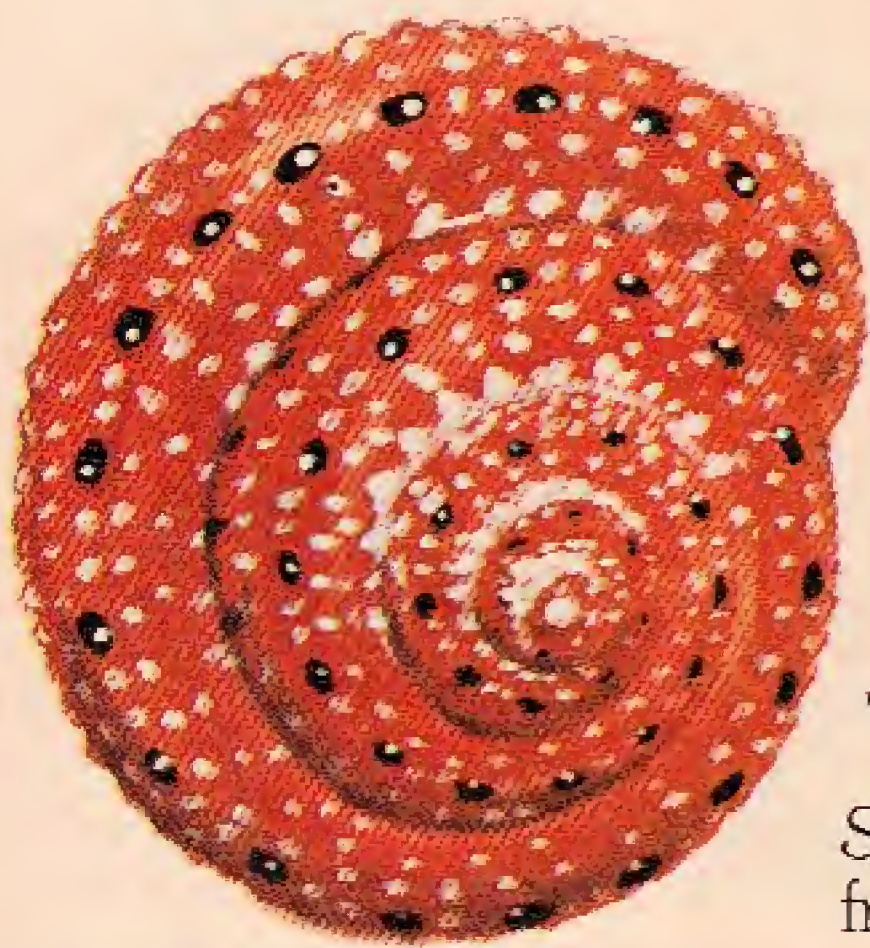
This is a large world-wide family with some truly fascinating and beautiful species.

1. *Murex pecten*. This well known Pacific shell is also called the *Venus Comb*.
2. *Murex palma-rosae*.
3. *Murex maurus sauliae*.





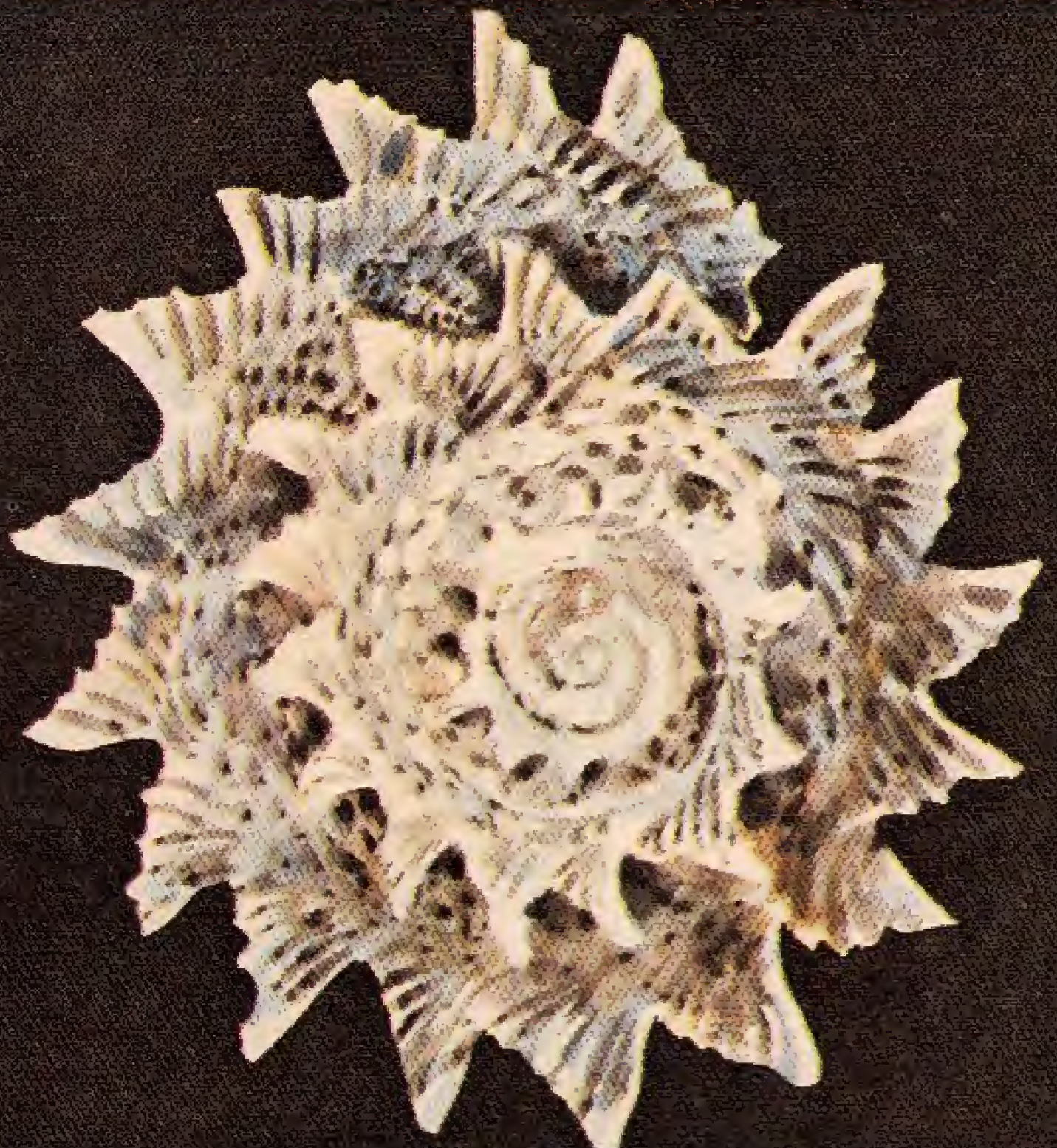
Lambis rugosa
from the Red Sea



Strawberry Shell
from the Indo-Pacific region.



The thin
delicate
Brown
Bubble Shell.



Cask Shell (left) and Star Shell (right) from New Zealand.



CHITONS

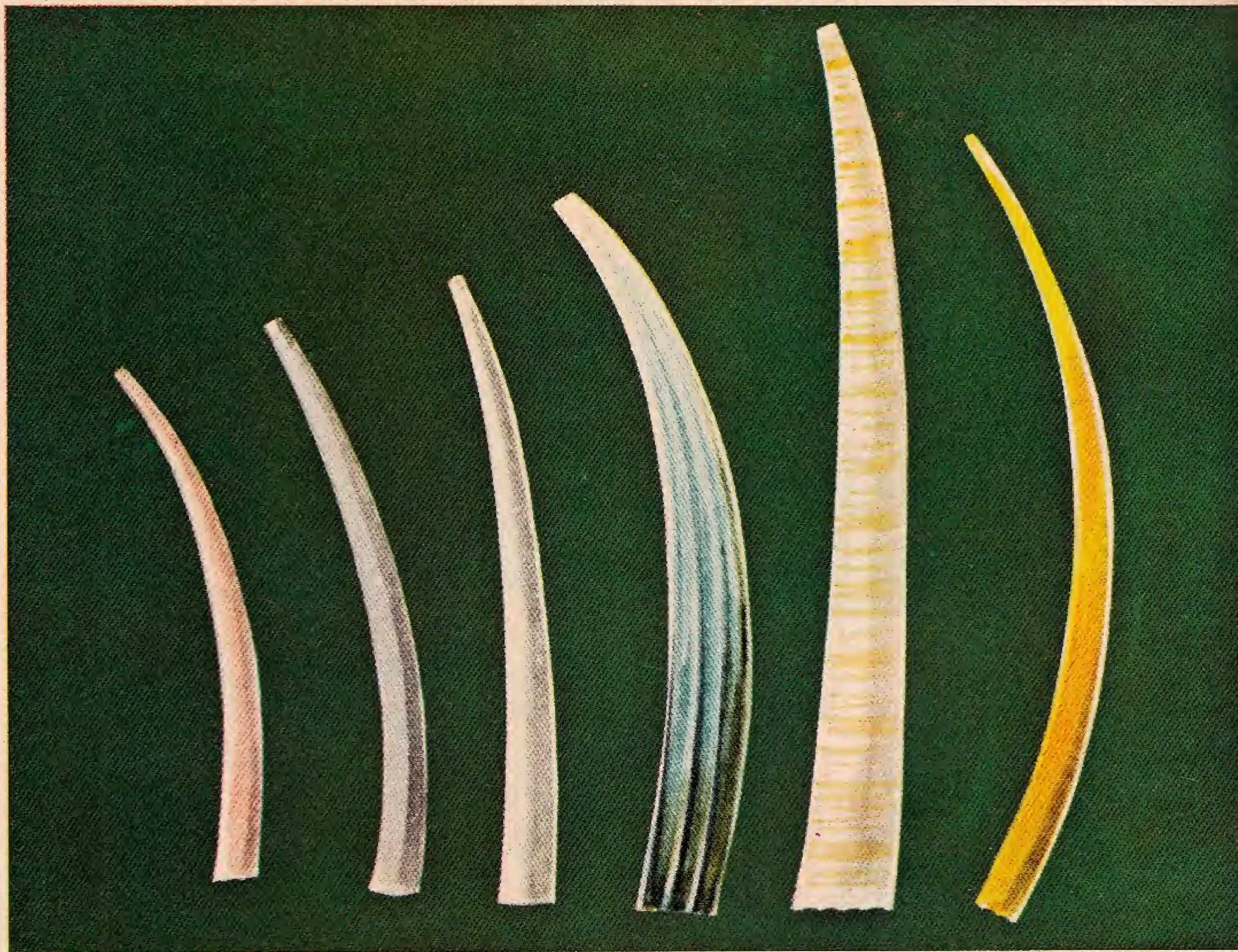
The Chitons or Coat-of-mail shells prefer shallow water, on the outer edges of reefs or along the shoreline, attached to rocks.

They become more active at night. Many are seaweed eaters. They are easily identified by their shell consisting of eight plates, resembling a suit of armour.



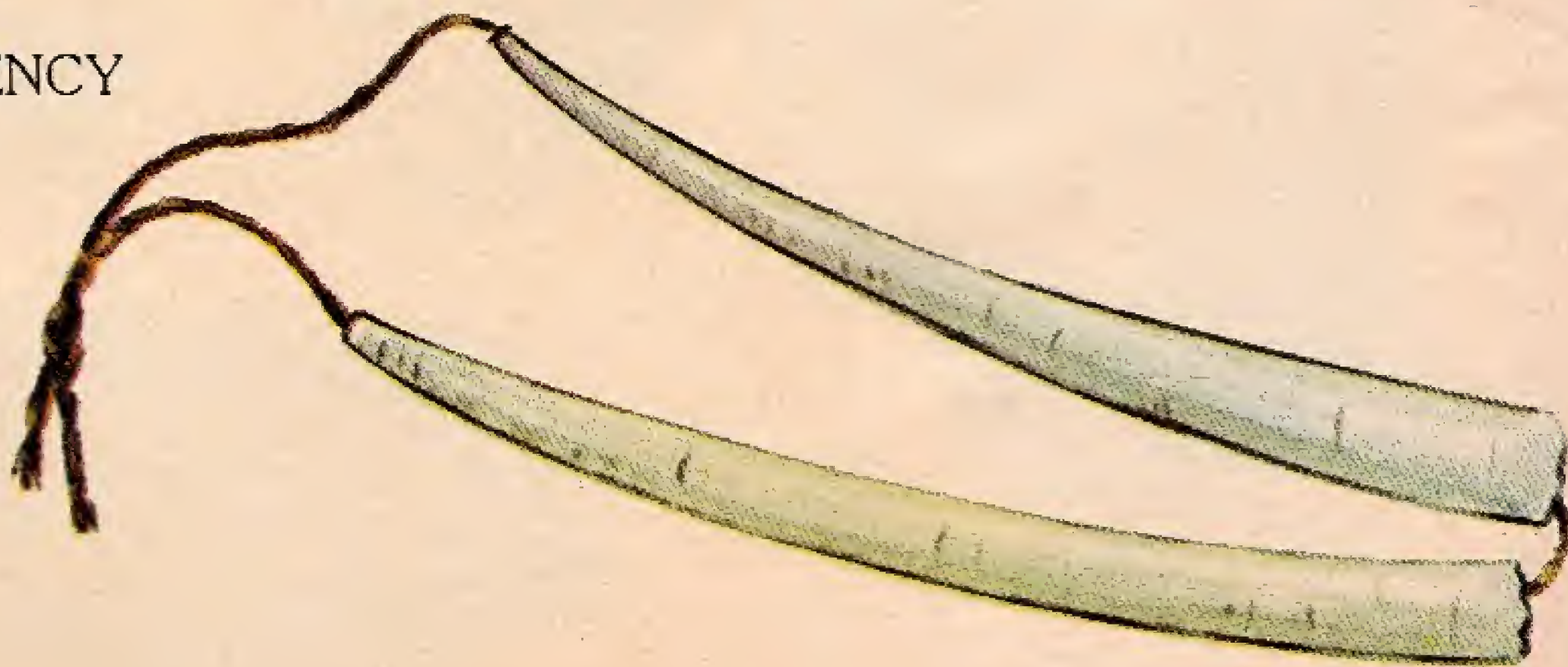
TUSK SHELLS

The *Tusk Shells* are rather rare deep water animals, having a shell consisting of a tapering form open at both ends.



A FORM OF CURRENCY

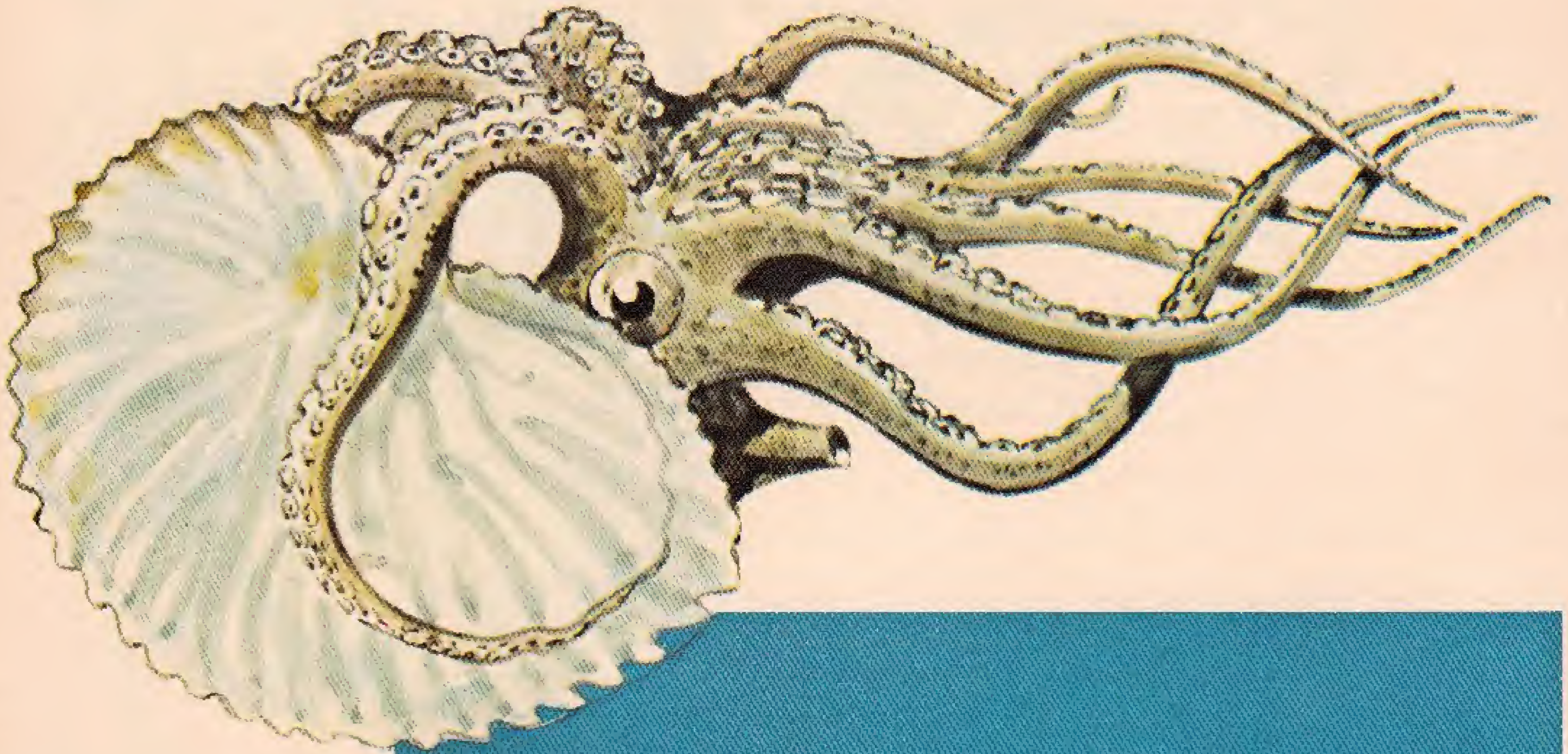
Shells have often been used as a form of money. Here a pair of *Tusk shells* strung together is used as native currency.



CEPHALOPODA

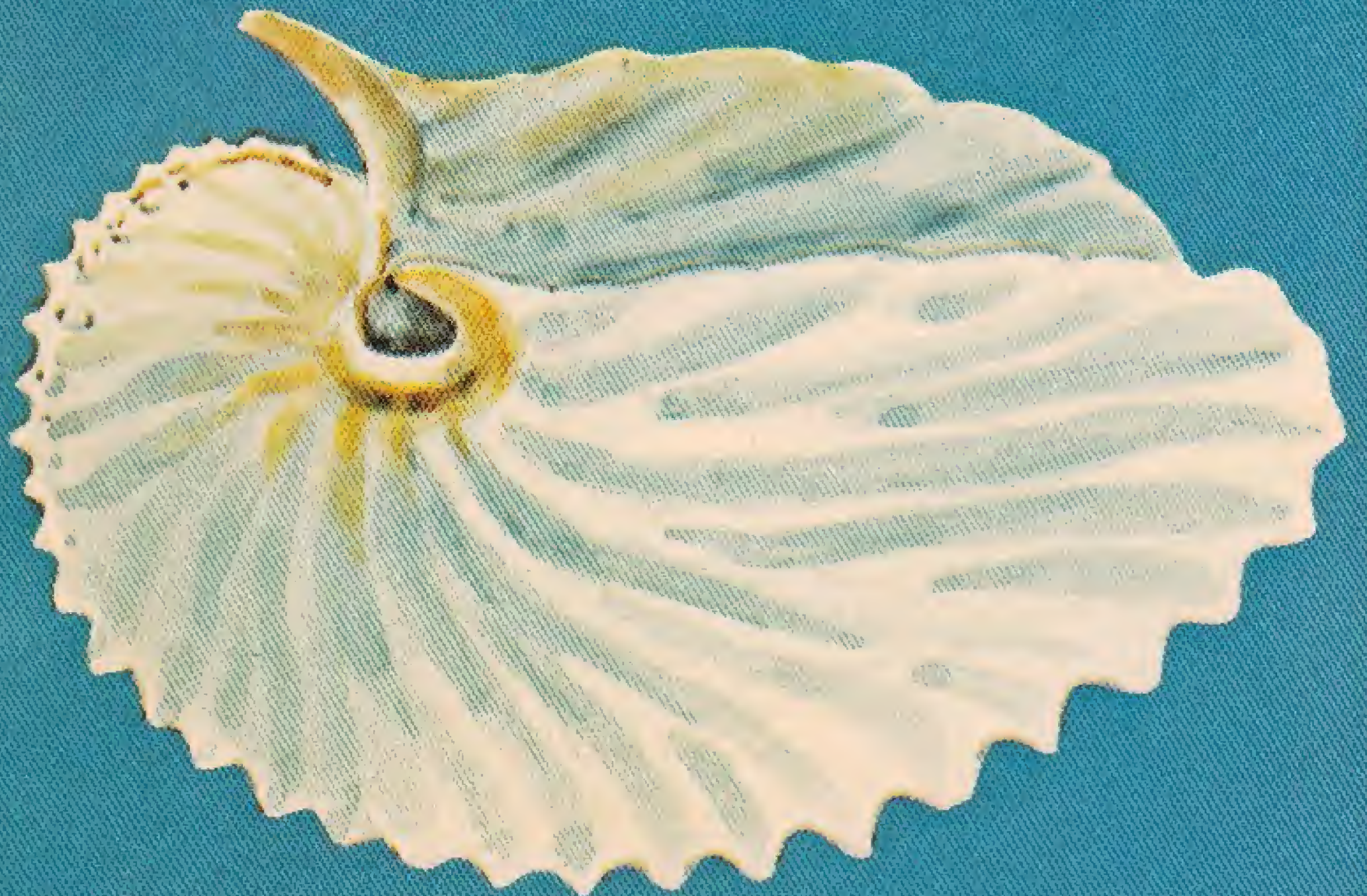
(Squids, Octopuses and their allies)

Most *Cephalopods* fall into two main groups. 1. The Octopus group with eight arms. 2. The Squid group with ten arms.



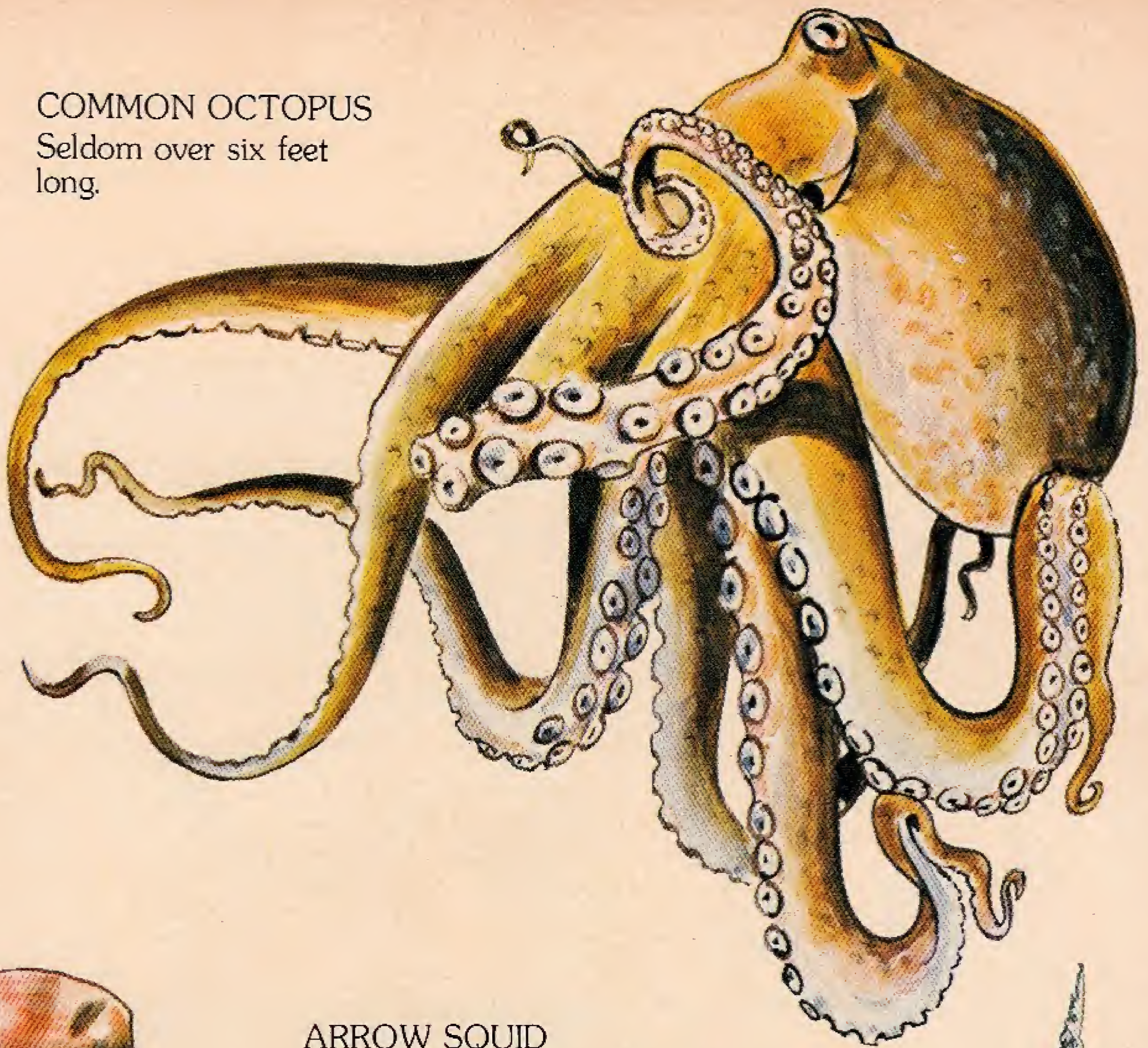
PAPER NAUTILUS

The shell of the *Paper Nautilus* is formed only by the female. This exceedingly fragile object is not really a shell, but an egg case for the eggs and developing young



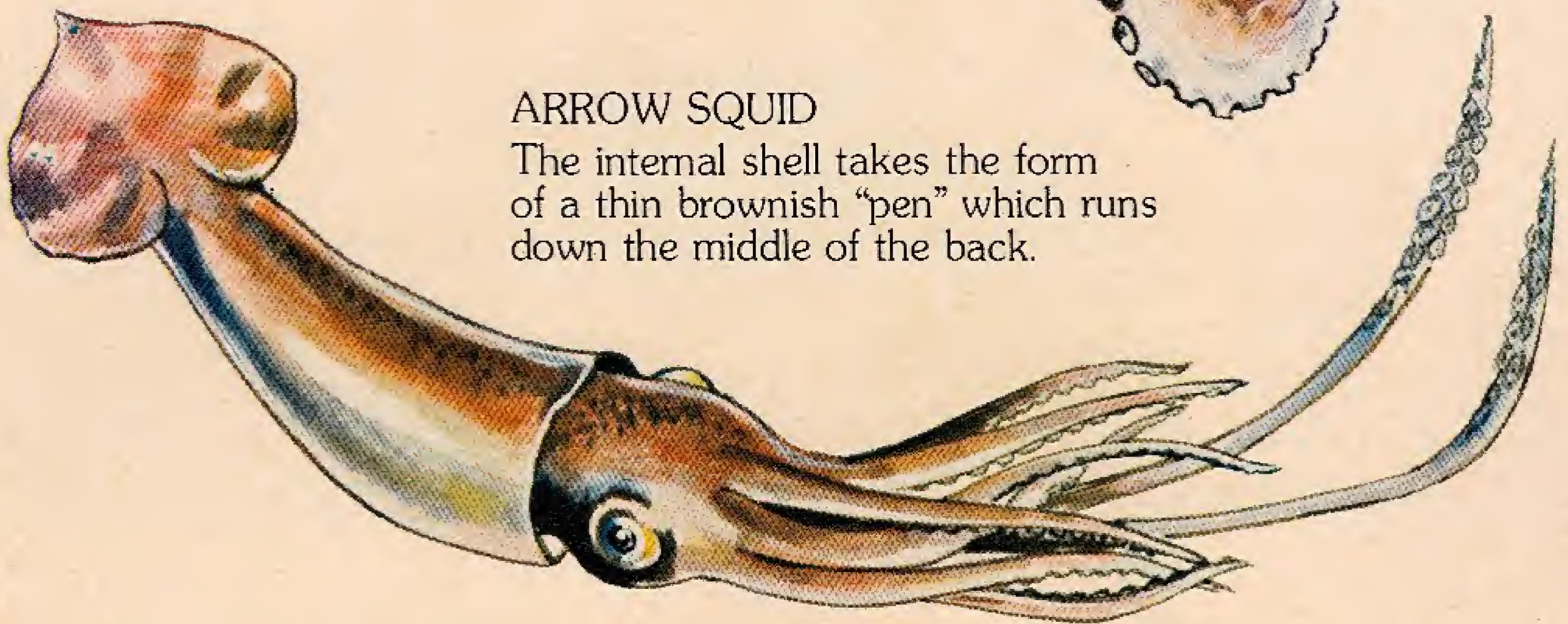
COMMON OCTOPUS

Seldom over six feet long.



ARROW SQUID

The internal shell takes the form of a thin brownish "pen" which runs down the middle of the back.



RAM'S HORN SHELL

This little creature is responsible for the shells which are cast ashore in their thousands, after the animal dies.



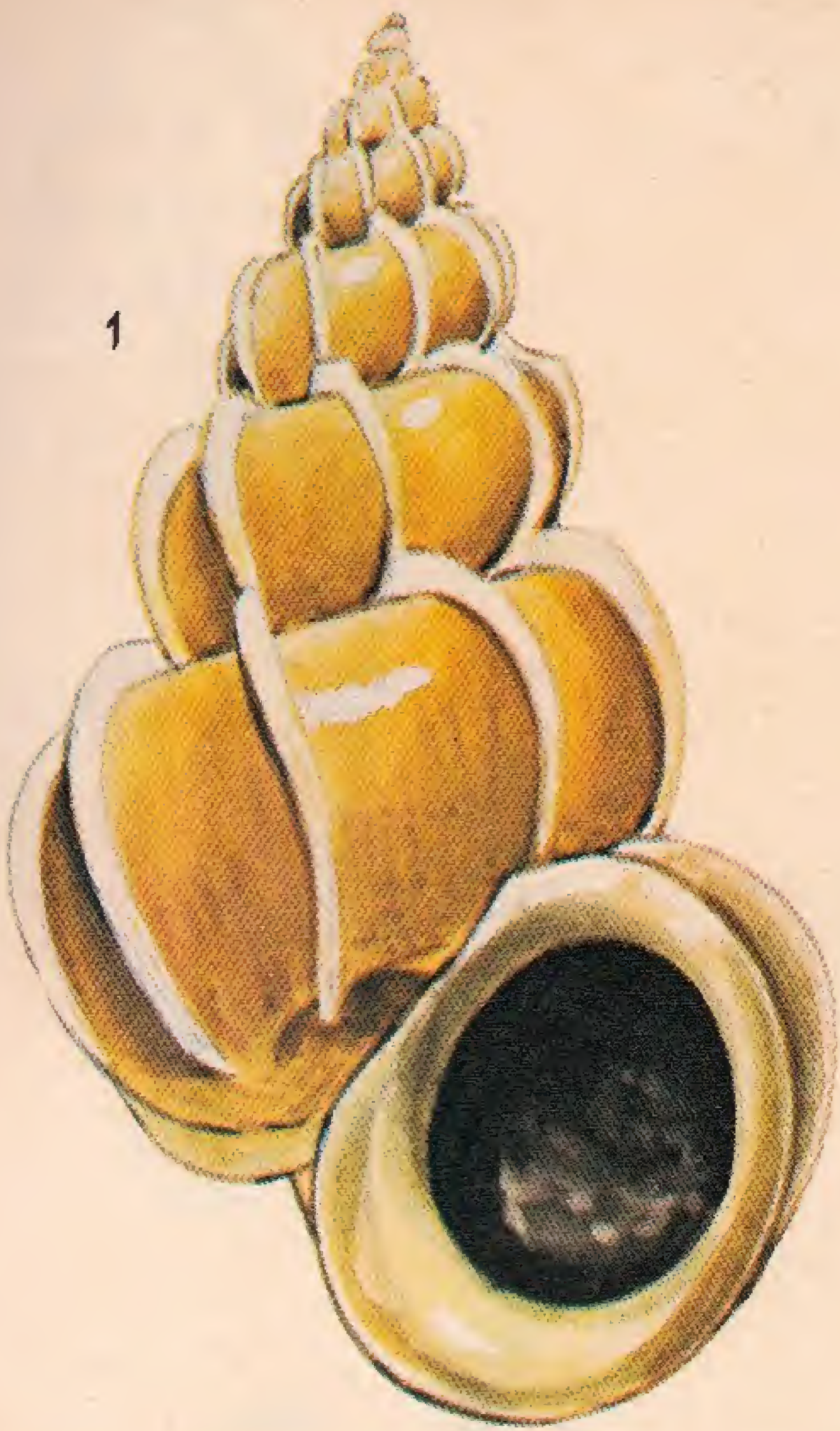
RARE SHELLS

Collectors are interested in shells which are attractive as well as scarce.

1. The precious *Wentletrap* formerly the most coveted of all seashells.

2. The *Golden Cowry* the most coveted of all cowries.

3. The *Spotted Cowry* a very rare species from the south-west Pacific.



2



3



A fine specimen of the
legendary *Glory-of-the-sea*
Cone, a shell all shell
collectors aspire to own.



The brown-spotted
Maculopeplum junonia
found only off the coast
of southern Florida
is a great prize for
the collector.



The rare and beautiful
Murex lobeckii,
from the China Sea.
There are only a few known
specimens of this shell in existence.

titles in this series

let's look at *TRANSPORTATION*

let's look at *WILD ANIMALS*

let's look at *ABORIGINALS OF AUSTRALIA*

let's look at *FISH OF THE WORLD*

let's look at *HOMES*

let's look at *EARLY AUSTRALIA*

let's look at *FARMING*

let's look at *PETS*

let's look at *BIRDS*

let's look at *INSECTS*

let's look at *PEOPLE OF OTHER LANDS*

let's look at *SHELLS AND SHELLFISH*